

B. Claims

Please amend the claims as follows. In accordance with the revised amendment format, a complete listing of all the claims appears below; this listing replaces all earlier amendments and listings of the claims.

Listing of Claims:

Claims 1-14 (canceled).

--15. (New) A storage facility comprising:

a main body having a storage room and an opening providing access to said room;

a door for opening and closing the opening providing access to said storage room; and

hinge means for connecting the door rotatably to said main body adjacent said opening;

said hinge means including a first hinge receptacle means secured to said door and a second hinge receptacle means secured to said the main body adjacent said opening and engaged opposingly with said first hinge receptacle; and

a hinge assembly including a fixing member having opposed ends defining passive rotators, each of said rotators having an inner cam surface; and a throughhole formed in said fixing member penetrating the passive rotators at the center thereof and defining a pivot axis for said door; said fixing member also having an exterior peripheral surface adapted to be received in one of said first and second hinge receptacles, the exterior peripheral surface of the fixing member and said one of said hinge receptacles in which it is received having first cooperating

means preventing rotation of said fixing member in said one of said hinge receptacles during opening and closing of the door;

    said hinge assembly also including a pair of rotating cam members respectively located adjacent said opposed ends of the fixing member each having a rotator cam surface engaged opposingly with the inner cam surface of the adjacent passive rotator of the fixing member and a throughhole penetrating the central portion of the rotating cam members; said rotating cam members being received in the other of said first and second hinge receptacles; the exterior peripheral surface of said rotating cam members and said other of said hinge receptacles in which they are received having second cooperating means preventing rotation of the rotating cam members in that receptacle during opening and closing of the door; a shaft located in and extending through the throughholes of the rotating cam members and the fixing member; stop means at the ends of said shaft extending beyond said rotating cam members, and a pair of elastic members respectively mounted on the ends of said shaft between said rotating cam members and said stop means, whereby when said door is opened and closed said fixing member rotates on said shaft relative to said rotating cam members such that the cam surfaces of said fixing member and rotating cam members move relative to each other to urge the rotating cam members in linear directions along the shaft under the bias of said elastic members, said cam surfaces of said fixing member and said rotating cam members having

        i)       first cooperating cam surfaces causing said rotating cam members to move axially along said shaft away from the fixing member as the door is moved from its open to its closed position to compress said elastic members and increase pressure on the rotating cam

members to urge them against the fixing member cam surfaces with a continuously increasing force up to a predetermined and almost closed position before the door is fully closed and

ii) second cooperating cam surfaces having a slope counter to the slope of the first cooperating cam surfaces to allow the rotating cam members to move axially along the shaft toward the fixing member to reduce pressure on said rotating cam members as the door moves from its predetermined almost closed position to its closed position.

16. (New) A storage facility as defined in claim 1 wherein said main body has a top and said opening is formed in said top; and said first and second cooperating cam surfaces on said rotating cam members being angularly related in predetermined relationships so that when the door reaches said predetermined almost closed position it will move to its closed position solely under the gravitational effect on the weight of the door.

17. (New) A storage facility as defined in Claim 16, wherein said first and second cooperating means comprise at least one longitudinally extending groove formed on the outer surface of each of said fixing members and said rotating cam members and at least one longitudinally extending complementary rib formed in said first and second hinge receptacle means.

18. (New) A storage facility as defined in Claim 17, wherein said first and second cooperating means comprise a plurality of grooves formed respectively on the outer surfaces of

said fixing member and rotating cam members and a plurality of ribs formed in said first and second hinge receptacle means.

19. (New) A storage facility as defined in Claim 18, wherein there are more grooves formed on the rotating cam members than on said fixing member, and more ribs formed on said second hinge receptacle means than on said first hinge receptacle means.

20. (New) A storage facility as defined in Claim 15, wherein the rotator cam surfaces and the inner cam surfaces of the passive rotators each have a horizontally truncated surface which is formed in the axial direction so that they are rotatably engaged in a surface-to-surface contacting manner, and said first and second cooperating cam surfaces are sloped surfaces formed with slopes in the axial direction from the leading end of the horizontally truncated surface, said horizontally truncated surfaces and said spirally sloped surfaces being located in opposition to each other in the open position of the door.

21. (New) A storage facility as defined in Claim 20, wherein the spirally sloped surfaces of said second cooperating cam sections are sloped in the axial direction commencing at the leading end of the horizontally truncated surface to a position at which they join their associated spiral sloped surfaces at the first cooperating cam surface which sloped away from the second cooperating cam sections in an opposite axial direction.

22. (New) A storage facility as defined in Claim 21, wherein a plurality of the horizontally truncated surfaces and the spirally sloped surfaces are formed in a 180° symmetrical structure in each of the rotating cam surfaces and said passive rotators, so that the horizontally truncated surface and the spirally sloped surfaces are located in opposition to each other around their respective central throughholes.

23. (New) A storage facility as defined in Claim 19, wherein an oil supply groove for temporarily storing and supplying lubricant oil is formed on the throughhole in the rotating cam members.

24. (New) A storage facility as defined in Claim 19, wherein said main body has a pair of adjacent storage rooms formed therein and a pair of doors for respectively opening and closing said openings, said second hinge receptacle being integrally formed in a central portion of the main body adjacent both of said openings and said first hinge receptacle means being integrally formed on the rear surface of the door, second hinge receptacle means comprising a pair of second hinge receptacles integrally formed respectively on said doors, said fixing member being located in said first hinge receptacle means and said rotation cam members being respectively located in said second hinge receptacle and , auxiliary door supporter means is integrally formed at each end of the main body adjacent said second hinge receptacles for aiding in pivotally supporting the doors thereby to enable a plurality of doors to be installed by using a single hinge assembly.

25. (New) A storage facility as defined in Claim 15, including fixing cap means for blocking one side of the hinge receptacle into which the hinge assembly is inserted.--